

### FIELD OF THE INVENTION

This invention is related to electronic information transfer between trading partners and more particularly to the conversion and validation of item identifiers, part numbers, in documents that describe a manufactured product.

### BRIEF SUMMARY OF THE INVENTION

In the present invention, a private exchange catalog provides the description of an item and the item identifier, the part number, as represented in the sets of part numbers of each trading partner. The catalog is used for validation and processing of the Approved Manufacturer List, a cross reference between a buyers part number and a supplier part number, and for part number conversion and validation of the Bill of Material, a list of part numbers and quantities for a product, and the AML as these documents are transferred between the trading partners. Methods for using and maintaining the private exchange catalog are provided.

### Discussion

Peterson, et al provides a means for a first vendor to purchase items from a second vendor. Seaman, et al provides a mapping of a bill of material using manufacturing enterprise part numbers to a vendor's part number. Both require accurate translation of the part number of one organization to the part number of the other. These translation tables, called an Approved Manufacturer List or AML. The item descriptions among vendors are not consistent and not amenable to systematic processing. The AML is created and maintained as a manual process by each buying enterprise. The AML usually has errors that are discovered incrementally as they are encountered and corrected by the buying enterprise. Peterson, Seaman, and the other references assume that the cross part number translations are correct. The present invention provides processes to correct and validate the AML, the cross part number translations.

For Electronic Manufacturing Service providers, EMS (contract manufacturers), the AML is maintained by the design enterprise, the Original Equipment Manufacturer, OEM. The OEM AML translates an OEM part to a vendor name and vendor part number. It is the EMS that purchases the items and discovers the errors. To prevent errors from reaching the manufacturing floor, the EMS would prefer to check the AML from the OEM before purchasing items. However, the AML is sent many times by the OEM and errors that were corrected in the past are reintroduced. The errors are of three categories; incorrect item part number, incorrect part number for a correct item with an incorrect carrier as required by the assembly equipment (The carrier is a package containing a quantity of an item and designed to feed automated assembly equipment. An item may be sold in several carrier types to fit different equipment.); and multiple uses of the OEM part number by the OEM design organization (The OEM may be a large global company and different design

groups use the same OEM part number for different uses. The actual item used by one design group may differ from that of another in tolerance, temperature range, etc., and the items must be purchased and managed as separate items). It is not to the benefit of the EMS to communicate to the OEM to correct the AML since this would make it easier for the OEM to go to a competitor EMS with correct AML data. Correcting and validating the AML is considered part of the service provided by the EMS.

The EMS assigns an internal part number to the item so that multiple uses of an OEM part number are distinguishable. The addition of assigning the EMS part number is different from prior art net change processes. The EMS part number is also used as the index for organizing and controlling the site part numbers. In the claims, the first part number is the OEM part number, the second part number is the vendor part number, the third part number is the EMS part number, the fourth part number is the EMS part number where an OEM has used the same OEM part number for a different item, the fifth part number is an EMS site part number.

A global EMS has multiple manufacturing sites. Each site has different assembly equipment that requires different carriers. Each site has different part number systems for the site materials planning system. In the prior art, the AML for an OEM is translated at each site and errors are discovered and corrected at each site. The present invention provides a private exchange catalog using a part number system independent of the EMS sites, a process for identifying changes to the OEM AML so that only changes require validation to assure the correct item and a process for translating the AML to the carrier requirements and part number for each EMS site. The change detection makes the manual validation process efficient, prevents reintroduction of errors, and provides a single point of error correction. The translation to site requirements and part number is automated since the data are valid. Global manufacture of an OEM assembly and site transfers are facilitated.

The examiners suggestions have been helpful and claims have been revised. Claims 1-17 have been cancelled. The new claims are grouped as 18-23, 24-29, and 30-35 where claims 18, 24, and 30 are independent claims

Respectfully submitted



N. K. Ouchi